

# The Marine Environmental Sciences Consortium



*Serving a Consortium of Alabama Public  
and Private Colleges and Universities*

**John F. Valentine**  
Dauphin Island Sea Lab



**Home for the  
MESCL: *The  
Dauphin Island  
Sea Lab***



***DISL Campus***

# Growth in Research: Our Most Recent Additions



*Richard C. Shelby Center for Ecosystem-  
Based Fisheries Management*

*Experimental Tank  
Mesocosm Facility*



# Research Vessels

*R/V Alabama Discovery*

*R/V E.O. Wilson*



# *Deepwater Horizon April 2010*



The drilling mast has toppled over here – they usually melt pretty fast when fire breaks out



Early morning Day 2 – Note the hole burned through the aluminum helideck

# **Large mats of emulsified oil south of Dauphin Island**



**Bay Anchovy with oil  
on its gill rakers**

# **DISL Immediate Responses**

- **Characterized baseline health and condition of:**
  - **Reef fishes**
  - **Demersal fishes**
  - **Oysters**
  - **Planktonic assemblages**
    - **invertebrate, vertebrate, and microbial**
  - **Critical nursery habitats**

# Completed DISL Acute Characterizations: BACI Designs

- **Task 1: Document the impacts of oil intrusion on economically and ecologically important fishes in Alabama's nearshore and coastal waters**
- **Task 2: Document the impacts of oil intrusion on keystone sentinels in Mobile Bay waters**
- **Task 3: Document the impacts of oil intrusion on the health of critical nursery habitats and habitat utilization patterns of the young of economically important fishes**
- **Task 4: Evaluate the impacts of oil, methane and dispersant on pelagic food web structure and organic matter cycling along the Alabama coast**
- **Task 5: Evaluate the extent to which sedimentary biogeochemical cycles and specifically the nitrogen cycle have been changed by inundation of coastal waters by oil**
- **Task 6: Quantifying the effects of oil on the microbial community structure and processes in Alabama coastal waters**
- **Task 7: Evaluate the potential for along-estuary transport of oil-derived substances in surface and subsurface waters of the ship channel of the Mobile Bay Estuary**
- **Tasks largely completed 12/31/2010**

# **BP-Gulf of Mexico Research Initiative (GRI)**

- **Based on the efforts of DISL-resident scientists, on July 26, 2010, BP presented the MESC with a check for \$5,000,000**
- **The ultimate goal of the GRI was “to improve society’s ability to mitigate the impacts of hydrocarbon pollution and other stressors of the marine environment with emphasis on conditions found in the Gulf of Mexico”.**

# BP-GRI Priorities

- **Physical distribution, dispersion and dilution of contaminants under the action of ocean currents and tropical storms**
- **Chemical evolution and biological degradation of the oil/dispersant systems and subsequent interaction with the marine and coastal ecosystems**
- **Environmental effects of the oil/dispersant system on the sea floor, water column, coastal waters, shallow water habitats, wetlands, and beach sediments and the science of ecosystem recovery**
- **Technology developments for improved mitigation, detection, characterization, and remediation of oil spills**
- **Fundamental scientific research integrating results from the other four themes in the context of public health**

# BP Requirements

- **Funds will be spent as quickly as possible on research consistent with the aims of the GRI**
- **Projects will be approved by appropriate experts before project commencement**
- **Data will be made fully and openly available as quickly as possible in accordance with standard applicable practices**
- **Peer review publications are of paramount importance**

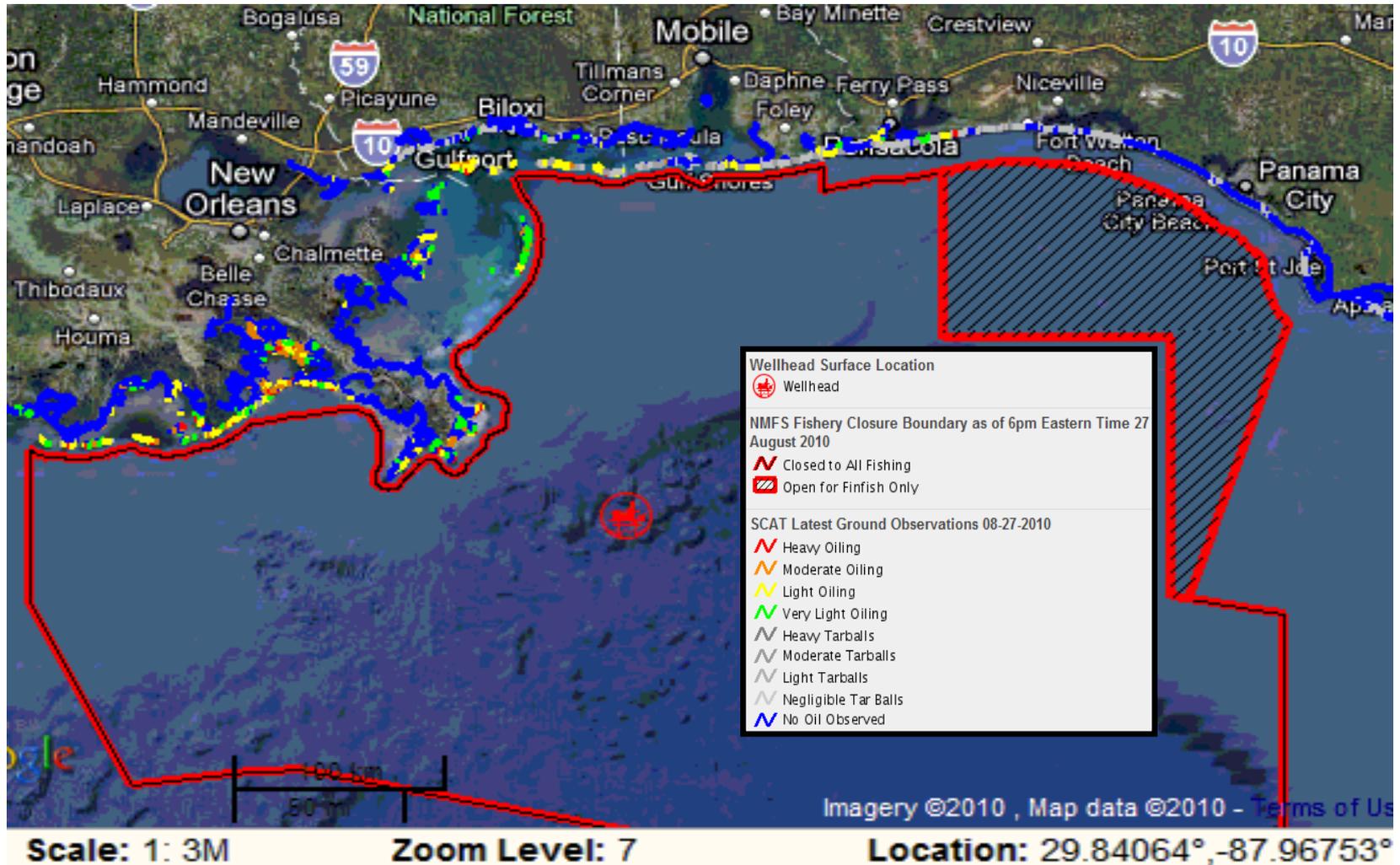
# MESC Requirements

- **The charge: formulate hypothesis-driven science that evaluates the impacts of hydrocarbon based pollution on our coastal resources and the services they provide**
- **Proposed budgets were based on TDC**
  - **NCE's will not be granted on GRI-Funded Research**
- **Timelines must be closely adhered to by all PI's**
- **Quarterly and final reports must be submitted on time**

# MESC Process

- **Selected meritorious hypotheses and questions that addressed concerns about hydrocarbon pollution on coastal ecosystems at the workshops**
- **Selected co-chairs from the member institutions to help lead in the development of the four work plans**
  - **Work plans and budgets were completed by the first of October**
- **Work plans were independently evaluated by a panel of experts selected by the Harte Institute**
- **Results of the independent evaluation were provided to the PIs and theme co-chairs**
- **Funding recommendations were made by the PI in consultation with co-chairs**

# Study Boundary Justification



Source: [www.geoplatform.gov](http://www.geoplatform.gov)

# The Budget

- **\$ 1,000,000 was allocated for each theme**
  - **A cap on administrative fees was set at 15% TDC**
  - **Include funds for data management in your work plans**
- **\$ 250,000 was set aside for SGER (< 15K/project)**
- **~\$400,000 was set aside for MESC administrative fees (8% of the total allocation)**
- **Remaining funds have been applied to unanticipated costs, costs associated with external evaluations of the work plans, co-chair salaries and, if possible, amendments to meritorious study plans that exceed the initial allocations**

# **Harte Institute Advisory Panel**

- **Advisory Panel Composition**
  - **Eight expert scientists in residence at institutions of higher learning in Gulf states**
    - **Two panelists/theme**
  - **Two co-chairs from the Harte Institute with oil spill experience**
- **Panel meeting took place in October**

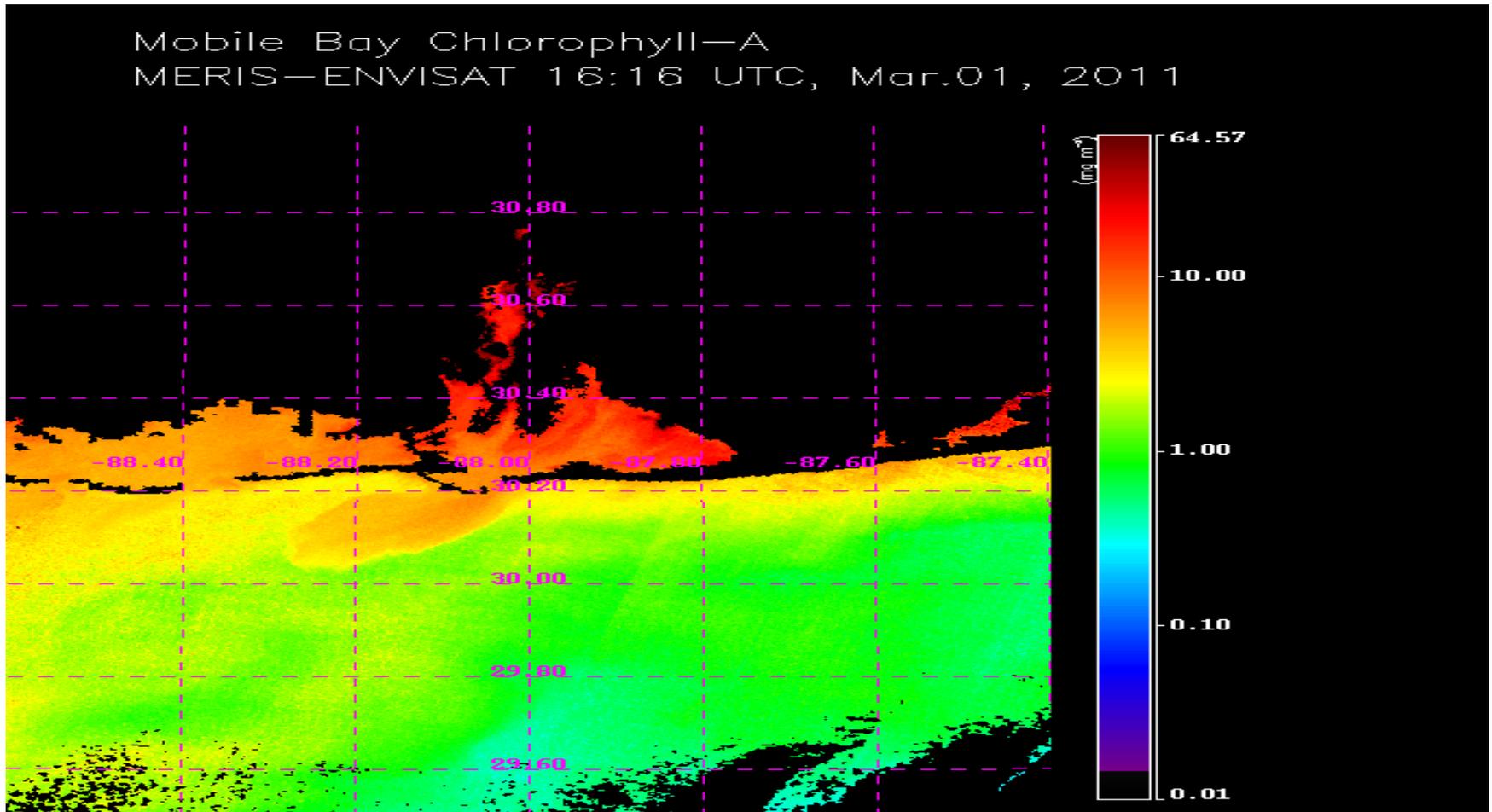
# **Award Details**

- **91 Full Grant Investigators**
- **18 SGER Investigators**
- **11 MESC Member Institutions**
- **2 Gulf Coast Institutions (LSU & UF)**

# Early Returns: Beach Clean-up Evaluation



# First ADCP Complete



# Stay Tuned: We Are Just Getting Started !



# More Questions?

**Additional Information  
on Research at  
the Dauphin Island  
Sea Lab**

**[www.disl.org](http://www.disl.org)**

